

AN UNDESCRIBED *SACCHARUM* (POACEAE: ANDROPOGONEAE) FROM JAMMU AND KASHMIR, NORTHWEST HIMALAYA, INDIA

S. RAJESHWARI

Botanical Survey of India
Dehra Dun-248 195, INDIA

R.R. RAO and A. GARG

National Botanical Research Institute
Lucknow-226001, INDIA

ABSTRACT

A new species of Poaceae, *Saccharum stewartii* Rajeshwari, R.R. Rao & Garg from Jammu & Kashmir, northwest Himalaya, India, is described and illustrated. Palynology of the new species is analyzed and compared with its closely allied *S. griffithii* Munro ex Boiss.

RESUMEN

Se describe e iconografía una especie nueva de *Poaceae*, *Saccharum stewartii* Rajeshwari, R.R. Rao & Garg, de Jammu y Cachemira, noroeste del Himalaya, India. Se analiza y compara la palinología de esta especie con la de su pariente cercana *S. griffithii* Munro ex Boiss.

The genus *Saccharum* L. (sensu lato), with ca. 35–40 species, is distributed in the tropics but extends to warm temperate regions of the world. In India, the genus has ca. 16 species mostly in the tropical belt (Bor 1960). During a taxonomic study on grasses of Jammu & Kashmir, the authors came across an interesting specimen of the genus collected from the Kashmir Valley and carrying a determinavit slip by N.L. Bor bearing the name *Erianthus stewartii* Bor. Critical examination of the specimen indicated that this is an unique species morphologically very near to *Saccharum griffithii* Munro ex Boiss. However, the binomial *Erianthus stewartii* was never published and further, as the species of *Erianthus* are now transferred under *Saccharum*, a new binomial, *Saccharum stewartii* is necessary and described here.

***Saccharum stewartii* Rajeshwari, R.R. Rao & Garg, sp. nov. (Fig. 1).**

Erianthus stewartii Bor, nom. nud.

Proxime affinis *S. griffithii* Munro ex Boiss. sed differt racemis perlongioribus, pedunculis pilosis, callo cum pilis usque ad 6.8 mm longis, aristis usque ad 3 mm longis, antherisque usque ad 2 mm longis.

Perennial; culms up to 3 m high. Leaf blades up to 50 cm long, tough, long attenuate at the tip. Panicle ca. 20 cm long; peduncle villous; racemes

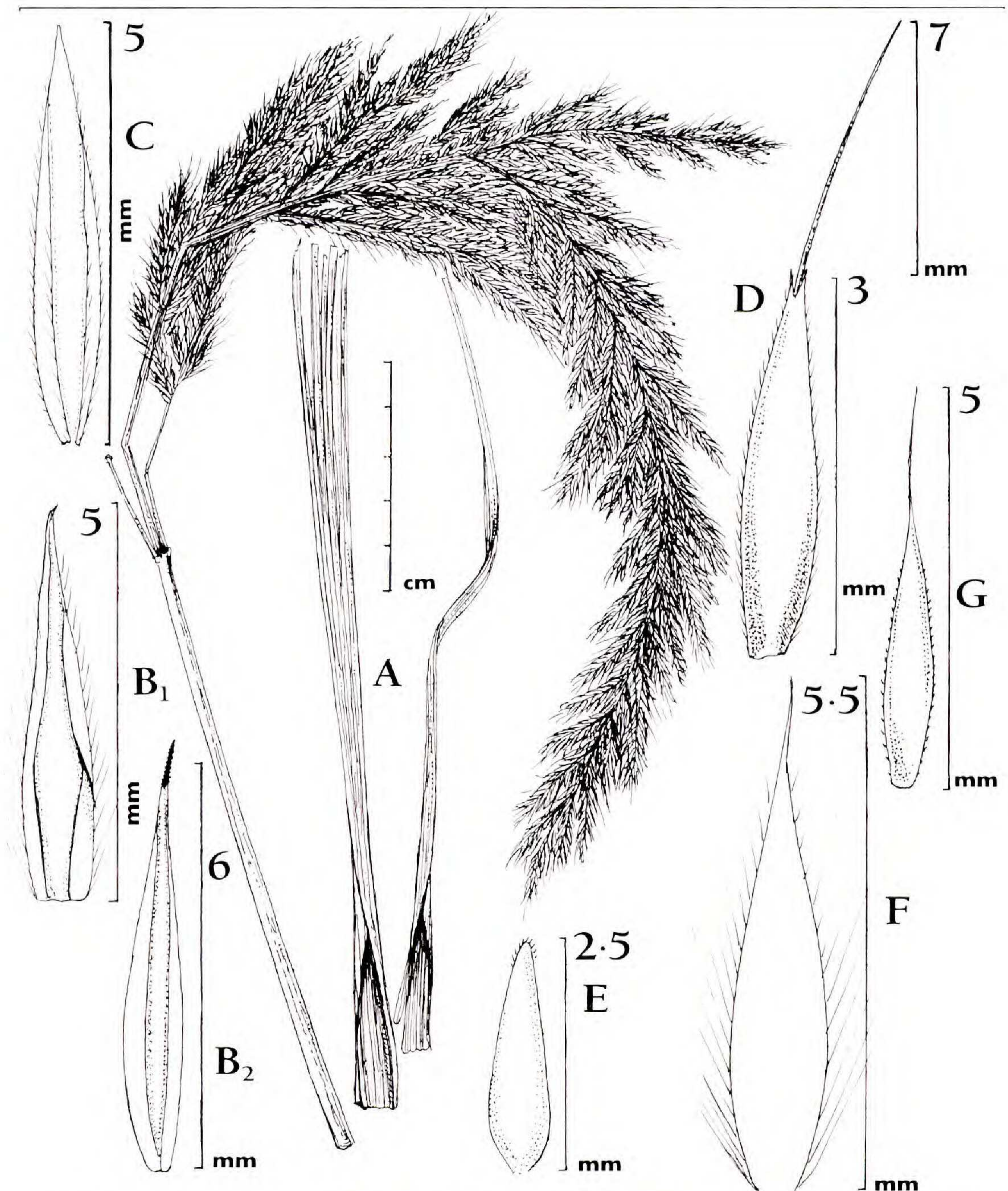


FIG. 1: *Saccharum stewartii* Rajeshwari, Rao & Garg. A. Portion of Inflorescence, B₁, B₂ upper and lower glumes; C. lower lemma; D. upper lemma with awn; E. palea; F.&G. lower glume and lower lemma of the pedicelled spikelet.

6–7.5 cm long; internodes hairy; hairs up to 6 mm long. Sessile spikelets up to 8 mm long; callus bearded with silky hairs; hairs up to 6.8 mm long, usually shorter than the spikelets and not concealing them; glumes equal, ovate-lanceolate, keeled, 1–3 nerved, scabrid on the keels, hairy on the back or glabrous; lower lemma 3 mm long, 3-nerved, ciliate at the margins, hyaline; lower palea membranous, as long as the lower lemma, ciliate at the

margin; upper palea membranous, hyaline; upper lemma 2 mm long, entire, ciliate at the margins, awned; awn 3 mm long, straight; anthers 2 mm long. Pedicelled spikelets male only or bisexual; lodicules 2, cuneate or ovate-oblong, faintly ciliate; caryopsis not observed.

TYPE: INDIA. KASHMIR: Rupal to Gurikot, 2500 m, 23 Aug 1939, *R.R. Stewart & I.D. Stewart 18893* (HOLOTYPE: DD).

Saccharum stewartii closely resembles *S. griffithii* Munro ex Boiss in having awned spikelets in short, articulate racemes borne on long panicles, acute or acuminate, membranous glumes, and lower florets all neuter. The two species can be separated as follows:

Panicle more than 20 cm; peduncle glabrous; racemes up to 2.5 cm long; callus hairs yellow or cream colored, 3–4 mm long; awn of upper lemma 4 mm long	<i>S. griffithii</i>
Panicle up to 20 cm; peduncle hairy; racemes 6–7 cm long; callus hairs white, 6–8 mm long; awn of the upper lemma less than 3 mm long	<i>S. stewartii</i>

Palynology

In addition to the above morphological differences the new species also reveals certain palynological differences with that of *S. griffithii*. The morphology of the pollen grains in the two species is discussed below.

Saccharum stewartii Rajeshwari, R.R. Rao & Garg

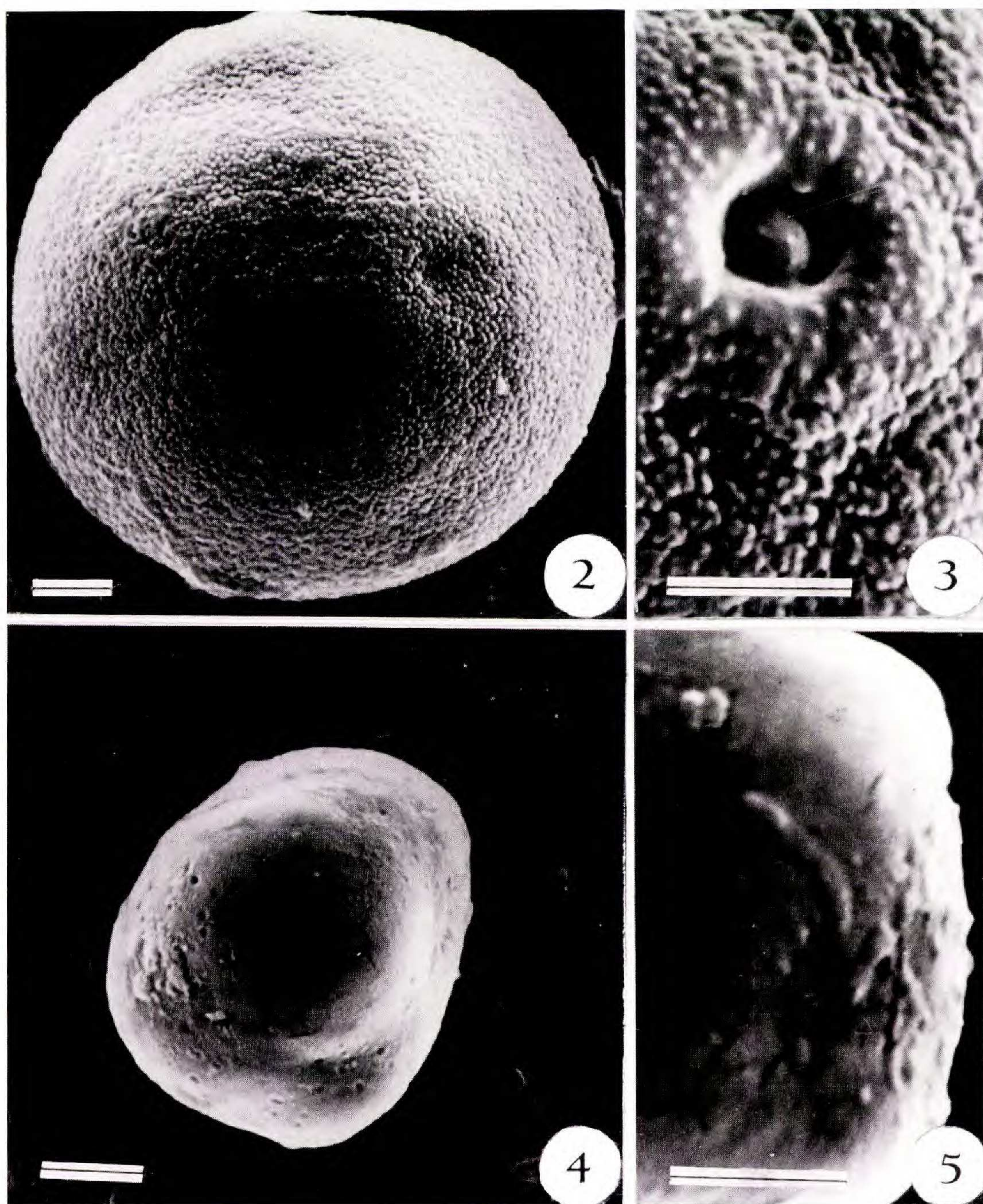
Grains 29.3 μ m (29–29.6 μ m) in diam, spheroidal with circular outline; typically monoporate, pores operculate, annulate. Annulus conspicuous. Exine surface finely granulate, granules of low relief, grouped in close proximity, sparse at annulus; exine 1 μ m thick, thicker at the annulus region (2.25 μ m), (Figs. 2 & 3).

Saccharum griffithii Munro ex Boiss

Grains 16 μ m (15–18 μ m) in diam, spheroidal with circular outline, typically monoporate, pores operculate, annulate. Annulus faint. Exine surface psilate with few punctae distantly scattered having a negative reticulum. Exine 1 μ m thick, slightly varying in thickness near the aperture (Figs. 4 & 5).

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FIGS. 2–5. Scanning Electron Micrographs of pollen of *Saccharum stewartii* Rajeshwari, R.R. Rao & Garg (Figs. 2 & 3) and *Saccharum griffithii* Munro ex Boiss (Figs. 4 & 5). Scale lines = 3 μ m

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